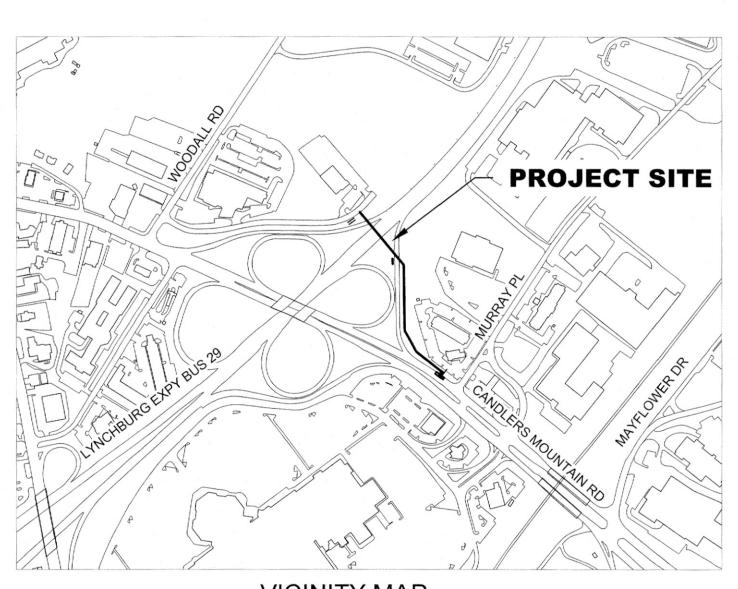
# CITY OF LYNCHBURG

# DEPARTMENT OF WATER RESOURCES CANDLERS MOUNTAIN ROAD CONNECTOR WATERLINE DESIGN

LYNCHBURG, VIRGINIA **FEBRUARY 1, 2022 CITY OF LYNCHBURG PROJECT #18009-W** 



- VICINITY MAP
- WATER QUALITY IMPACTS WORK INCLUDED IN THIS PROJECT DOES NOT INCREASE AMOUNTS OF IMPERVIOUS SURFACES. THE WORK WILL HAVE NO IMPACT ON WATER QUALITY.
- STREAM CHANNEL PROTECTION ALL GRADES AND SURFACES WILL BE RETURNED TO PRE-WORK CONDITIONS. THEREFORE, THERE WILL BE NO CHANGE TO RUNOFF QUANTITIES, RATE OF FLOW OR OTHER HYDRAULIC CONDITION.
- 3. FLOODING IMPACTS THE WORK WILL HAVE NO IMPACT ON THE 10-YEAR PEAK RUNOFF RATE.
- CONSTRUCTION SHALL BE SEQUENCED TO LIMIT THE DISTURBED AREA TO LESS THAN (1) ACRE. DISTURBED AREAS MUST BE STABILIZED IMMEDIATELY FOLLOWING THE COMPLETION OF WORK IN THAT AREA.
- THE PROJECT DOES NOT SIGNIFICANTLY ALTER THE PREDEVELOPMENT RUNOFF CHARACTERISTICS OF THE LAND SURFACE AFTER THE COMPLETION OF CONSTRUCTION AND FINAL STABILIZATION.
- 6. THE PROJECT IS MANAGED SO THAT LESS THAN ONE (1) ACRE OF LAND DISTURBANCE OCCURS ON A DAILY
- 7. THE ENVIRONMENT IS PROTECTED FROM EROSION AND SEDIMENTATION DAMAGE ASSOCIATED WITH THE LAND DISTURBING ACTIVITY.
- 8. THE OWNER AND/OR CONSTRUCTION ACTIVITY OPERATOR DESIGNS, INSTALLS, IMPLEMENTS, AND MAINTAINS POLLUTION PREVENTION MEASURES TO:
- A. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM EQUIPMENT AND VEHICLE WASHING, WHEEL WASH WATER, AND OTHER WASH WATERS. B. MINIMIZE THE EXPOSURE OF BUILDING MATERIALS, BUILDING PRODUCTS, CONSTRUCTION WASTES,
- TRASH, LANDSCAPE MATERIALS, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE, AND OTHER MATERIALS PRESENT ON-SITE TO PRECIPITATION AND TO STORMWATER.
- C. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM SPILLS AND LEAKS AND IMPLEMENT CHEMICAL SPILL AND LEAK PREVENTION AND RESPONSE PROCEDURES.
- D. PROHIBIT THE DISCHARGE OF WASTEWATER FROM THE WASHOUT OF CONCRETE. E. PROHIBIT THE DISCHARGE OF WASTEWATER FROM THE WASHOUT AND CLEANOUT OF STUCCO, PAINT
- FORM RELEASE OILS, CURING COMPOUNDS, AND OTHER CONSTRUCTION MATERIALS. F. PROHIBIT THE DISCHARGE OF FUELS, OILS, OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE.
- THE OWNER AND/OR CONSTRUCTION ACTIVITY OPERATOR PROVIDES REASONABLE ASSURANCE TO DEQ OR THE LOCAL VSMP AUTHORITY THAT ALL OF THE ABOVE CONDITIONS WILL BE SATISFIED. THIS MAY BE ACCOMPLISHED BY INCORPORATING THESE CONDITIONS INTO AN EROSION AND SEDIMENT CONTROL PLAN DEVELOPED FOR THE PROJECT.

CONTROL POINT - NAIL SET STORM MANHOLE SANITARY MANHOLE POWER POLE LIGHT POLE FIRE HYDRANT TELEPHONE POLE

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RAILROAD TRACKS **EDGE OF PAVEMENT** 

**FENCELINE** 

TREELINE

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OVERHEAD TELEPHONE UNDERGROUND NATURAL GAS

OVERHEAD ELECTRIC UNDERGROUND ELECTRIC

STORM LINE WATER LINE

SANITARY LINE

PROPERTY LINE

EDGE OF WATER SOIL DELINEATION

#### LYNCHBURG, VA 24501 PHONE:

SCOTT PARKINS, P.E.

OWNER INFORMATION:

UTILITIES ENGINEER 525 TAYLOR STREET (434) 455-4248

CITY OF LYNCHBURG

EMAIL: scott.parkins@lynchburgva.gov

# **ENGINEER INFORMATION:**

WILEY|WILSON 127 NATIONWIDE DRIVE LYNCHBURG, VA 24502

CONTACT: PHONE:

G. KEITH THOMPSON, PE (434) 455-3219 kthompson@wileywilson.com

## PROJECT NAME & LOCATION:

CANDLERS MOUNTAIN ROAD CONNECTOR WATERLINE DESIGN LYNCHBURG, VIRGINIA

IMPERVIOUS AREA STATISTICS

THE PLANNED IMPROVEMENTS WILL NOT CHANGE THE IMPERVIOUS COVER WITHIN THE PROJECT CORRIDOR.

PLANS ARE ACCEPTABLE TO VDOT

Droin VIRGINIA DEPARTMENT OF TRANSPORTATION

	LIST OF DRAWINGS				
C-101 OVERALL SITE PLAN  C-102 PLAN AND PROFILE - STA. 10+00 TO STA. 15+0	SHEET	ŢITLE			
C-102 PLAN AND PROFILE - STA. 10+00 TO STA. 15+0	G-001	COVER SHEET			
	C-101	OVERALL SITE PLAN			
C 103 DI ANI AND DECELLE STA 15+00 TO STA 20+3	C-102	PLAN AND PROFILE - STA. 10+00 TO STA. 15+00			
C-103 PLAN AND PROFILE - STA. 15+00 TO STA. 20+3	C-103	PLAN AND PROFILE - STA. 15+00 TO STA. 20+33			
C-401 E&S NARRATIVE	C-401	E&S NARRATIVE			
C-402 E&S DETAILS	C-402	E&S DETAILS			
C-501 DETAILS	C-501	DETAILS			
C-502 DETAILS - MAINTENANCE OF TRAFFIC	C-502	DETAILS - MAINTENANCE OF TRAFFIC			

LIST OF DRAWINGS

### **GENERAL NOTES**

# WATER LINE NOTES

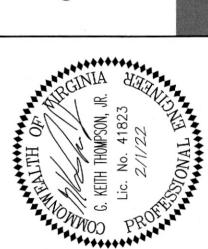
- COVER OF 36" UNLESS OTHERWISE INDICATED.
- ALL FITTINGS REQUIRE ANCHOR BLOCKS AND RESTRAINED JOINTS AS DIRECTED BY ENGINEER. PROJECT IS LOCATED IN THE 1005 PRESSURE ZONE.
- STATIC PRESSURE VARIES FROM 75 P.S.I TO 150 P.S.I. TEST PRESSURE = 225 P.S.I.
- 4. THE CITY (DEPARTMENT OF WATER RESOURCES) SHALL OPEN AND CLOSE ALL WATER LINE VALVES AS NEEDED FOR CONSTRUCTION UPON 48-HOUR NOTIFICATION FROM CONTRACTOR.
  - 1. CONTACT THE CITY CONSTRUCTION COORDINATOR (HARRY BATEMAN 434-455-4267) AND MISS UTILITY 48 HOURS IN ADVANCE OF ANY CONSTRUCTION ACTIVITY. CONTACT VDOT IN ACCORDANCE WITH THE MAINTENANCE OF TRAFFIC NOTES ON SHEET C-502 PRIOR TO ANY WORK IN THE RIGHT OF WAY.
  - ALL WORK ON THIS PROJECT SHALL CONFORM TO THE LATEST EDITIONS OF THE 2020 VDOT ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS, THE CITY OF LYNCHBURG MANUAL OF SPECIFICATIONS AND STANDARD DETAILS, THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS, AND ANY OTHER STATE, FEDERAL, OR LOCAL REGULATIONS APPLICABLE. IN THE EVENT OF CONFLICT BETWEEN ANY OF THESE STANDARDS, SPECIFICATIONS OR PLANS, THE MOST STRINGENT SHALL GOVERN.

CITY OF LYNCHBURG PROJECT #18009-W

"I HEREBY CERTIFY THAT. TO THE BEST OF MY ABILITY. THIS PLAN HAS BEEN

	PREPARED IN ACCORDANCE WITH THE LATEST CIT SPECIFICATIONS AND STANDARD DETAILS AND CIT	
	SIGNATURE: REGISTRATION	NUMBER:
6	PRINTED NAME AND TITLE:	DATE:
	"I/WE HEREBY CERTIFY THAT ALL SITE CONSTRUCT WILL BE DONE PURSUANT TO THIS PLAN AND THE MANAGEMENT CONDITIONS AND REQUIREMENTS OF COMMONWEALTH OF VIRGINIA AND THE FEDERAL OF ARE HEREBY MADE PART OF THIS PLAN."	AT THE APPLICABLE STORMWATER THE CITY OF LYNCHBURG, THE
	SIGNATURE: TITLE:	
	PRINTED NAME: DATE:	·
	CITY ENGINEER:	DATE:
	UTILITIES ENGINEER:	DATE:
	ESC PLAN APPROVAL:	DATE:

Wiley | Wilson



COMM NO: 218090 FEBRUARY 1, 2022

DRAWN: MCT DESIGN: GKT CHECK: AST

SHEET TITLE

COVER SHEET

G-001

#### II. EXISTING SITE CONDITIONS

THIS SITE CONSISTS OF A MIX OF ASPHALT, GRAVEL, GRASSY OPEN SPACE, AND WOODED AREA. THE SITE GENERALLY DRAINS IN A NORTHERLY DIRECTION TO STORMWATER INFRASTRUCTURE ALONG THE LYNCHBURG EXPRESSWAY.

#### III. ADJACENT PROPERTIES

THE PROJECT SITE IS BOUNDED BY CANDLERS MOUNTAIN ROAD TO THE SOUTH, MURRAY PLACE TO THE EAST, BOARDER STREET TO THE WEST, AND CROSSES THE LYNCHBURG EXPRESSWAY.

#### IV. OFF-SITE AREAS

FILL MATERIAL WILL BE OBTAINED FROM AREAS OF EXCAVATION CONTAINED WITHIN THE SITE. UNSUITABLE MATERIAL WILL BE HAULED FROM THE SITE AND DISPOSED OF IN AN APPROVED MANNER. THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION AND SEDIMENT CONTROL PLAN TO THE EROSION AND SEDIMENT CONTROL REGULATOR PERTAINING TO OFF-SITE DISTURBED AREAS (IF ANY SUCH AREAS ARE REQUIRED) SUCH AS STOCKPILES, STAGING AREAS, AND SPOIL AREAS THAT ARE USED FOR THIS PROJECT. THE CONTRACTOR SHALL PROVIDE THE CITY LOCATION OF PERMITTED SITE NO LATER THAN THE PRE-CONSTRUCTION MEETING IF AN OFF-SITE AREA IS TO BE USED FOR IMPORTING OR EXPORTING SOIL.

USDA SOIL DATA IDENTIFIES THE PROJECT AREA TO BE COMPRISED OF URBAN LAND.

#### VI. CRITICAL AREAS

THERE ARE NO CRITICAL AREAS ON THIS PROJECT SITE.

#### VII. EROSION AND SEDIMENT CONTROL MEASURES

ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED BY THE CONTRACTOR IN ACCORDANCE WITH THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. SYMBOLS, DETAILS, AND DIMENSIONS USED ARE TAKEN FROM THE HANDBOOK, AS WELL AS THE LATEST EDITION OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION'S ROAD AND BRIDGE STANDARDS.

#### A. STRUCTURAL PRACTICES

- 1. TEMPORARY STONE CONSTRUCTION ENTRANCE (CE), SPEC. 3.02: A CONSTRUCTION ENTRANCE SHALL BE PROVIDED AS SHOWN ON THE PLANS AT THE EXISTING ROAD. EQUIPMENT WHEELS SHALL BE CLEAN WHEN ENTERING UPON A PAVED ROAD. ALL VEHICLES ENTERING AND EXITING THE PROJECT SITE SHALL USE A CONSTRUCTION ENTRANCE
- 2. SILT FENCE (SF), SPEC. 3.05: SILT FENCE BARRIERS SHALL BE PROVIDED WHERE SHOWN AND AS NEEDED TO PREVENT SEDIMENT FROM LEAVING THE SITE.
- 3. STORM DRAIN INLET PROTECTION (IP), SPEC. 3.07: STORM DRAIN INLET PROTECTION SHALL BE PROVIDED FOR INLETS AS SHOWN
- 4. ROCK CHECK DAMS (CD), SPEC. 3.20: PROVIDE ROCK CHECK DAMS AS SHOWN ON THE PLANS.

#### **B. VEGETATIVE PRACTICES**

- 1. TEMPORARY SEEDING (TS), SPEC. 3.31: TEMPORARY SEEDING SHALL BE PROVIDED ON SITE TO PROVIDE STABILIZATION UNTIL SITE DEVELOPMENT OCCURS. APPLY SEED BASED ON TEMPORARY SEEDING SCHEDULE SHOWN ON THE PLANS.
- 2. PERMANENT SEEDING (PS), SPEC. 3.32: PERMANENT SEEDING SHALL BE PROVIDED ON SITE TO PROVIDE STABILIZATION FOR ALL
- DISTURBED AREAS. APPLY SEED BASED ON TEMPORARY SEEDING SCHEDULE SHOWN ON THE PLANS. 3. MULCHING (MU), SPEC. 3.35: ALL PERMANENT AND TEMPORARY SEEDING SHALL BE STRAW MULCHED IMMEDIATELY UPON COMPLETION OF SEED APPLICATION. STRAW ON STEEP SLOPES SHALL BE ANCHORED UNLESS SEEDING WAS PROVIDED BY MEANS OF A HYDROSEEDING, IN WHICH CASE, MULCHING IS NOT REQUIRED.

#### C. MINIMUM STANDARDS

### YES MS-1 STABILIZATION OF DENUDED AREAS:

- PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE
- NO MS-2 STABILIZATION OF SOIL STOCKPILES: DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
- YES MS-3 PERMANENT VEGETATIVE COVER: A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED
- THAT IS UNIFORM. MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION. N/A MS-4 TIMING AND STABILIZATION OF SILT TRAPPING MEASURES: SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE
- FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE. YES MS-5 CONCENTRATED RUNOFF DOWN CUT OR FILLED SLOPES: STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS
- IMMEDIATELY AFTER INSTALLATION. N/A MS-6 SEDIMENT BASINS AND TRAPS: SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE
  - AREA TO BE SERVED BY THE TRAP OR BASIN. A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA
  - AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES. B. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A 25-YEAR STORM OF 24-HOUR DURATION.

RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR

- THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED. YES MS-7 CUT AND FILL SLOPES: CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH
- ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED. YES MS-8 CONCENTRATED RUNOFF DOWN CUT OR FILL SLOPES: CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE
- TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE. N/A MS-9 WATER SEEPAGE FROM A SLOPE FACE:
- WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED. YES MS-10 STORM SEWER INLET PROTECTION:
  - ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
- N/A MS-11 STABILIZATION OF OUTLETS: BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.
- N/A MS-12 WORK IN LIVE WATERCOURSES: WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.
- N/A MS-13 CROSSING A LIVE WATERCOURSE: WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.
- YES MS-14 APPLICABLE REGULATIONS: ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.
- N/A MS-15 STABILIZATION OF BED AND BANKS THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS

- COMPLETED. UNDERGROUND UTILITIES:
  - UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
  - A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME
  - B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
  - C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS
  - D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
  - E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THIS CHAPTER.

#### F. APPLICABLE SAFETY REQUIREMENTS SHALL BE COMPLIED WITH. CONSTRUCTION ACCESS ROUTES:

- WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER
- LAND-DISTURBING ACTIVITIES. TEMPORARY E&S CONTROL MEASURE REMOVAL:
- ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE VESCP AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION. YES MS-19 ADEQUACY OF RECEIVING CHANNELS:
  - PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA. STREAM RESTORATION AND RELOCATION PROJECTS THAT INCORPORATE NATURAL CHANNEL DESIGN CONCEPTS ARE NOT MAN-MADE CHANNELS AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS:
  - A. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE
  - PIPE OR PIPE SYSTEM SHALL BE PERFORMED. B. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:
  - (1) THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN
  - (2) (A) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS.
  - (B) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO-YEAR STORM TO
  - DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND (C) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.
  - C. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL:
  - (1) IMPROVE THE CHANNELS TO A CONDITION WHERE A TEN-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL, THE BED, OR THE BANKS; OR
  - (2) IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES; (3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR
  - STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TEN-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A
  - MAN-MADE CHANNEL; OR (4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE VESCP AUTHORITY TO PREVENT DOWNSTREAM EROSION
  - D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE
  - DEVELOPMENT CONDITION OF THE SUBJECT PROJECT F. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE VESCP OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE
  - G. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.
  - H. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE
  - I. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY
  - SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY. J. IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. XI. CONTACT PARTY FOR E&S IMPLEMENTATION INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL
  - ENGINEERING CALCULATIONS. K ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE.
  - L. ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO (I) DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS; (II) DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR. 24-HOUR STORM: AND (III) REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10-YEAR, 24-HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO § 62.1-44.15:54 OR 62.1-44.15:65 OF THE ACT.
  - M. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15:52 A OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (§ 62.1-44.15:24 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES ARE IN ACCORDANCE WITH 9VAC25-870-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATIONS.
  - N. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 9VAC25-870-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF SUBDIVISION 19 OF THIS SUBSECTION.

## D. MAINTENANCE:

ALL EROSION AND SEDIMENT CONTROL STRUCTURES AND SYSTEMS SHALL BE MAINTAINED, INSPECTED, AND REPAIRED AS NEEDED TO INSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED AT THE END OF EACH DAY AND AFTER EVERY RAINFALL EVENT. ALL FAILING OR DAMAGED — ESC MEASURES WILL BE FIXED OR REPLACED AS SOON AS THEY ARE OBSERVED.

- 1. DAMAGE TO EROSION CONTROL MEASURES CAUSED BY CONSTRUCTION TRAFFIC OR OTHER ACTIVITY SHALL BE REPAIRED BEFORE THE END OF EACH WORKING DAY.
- 3. (SPEC. 3.02) PROVIDE FOR EQUIPMENT WASHING AS NEEDED TO PREVENT THE TRANSPORT OF SOIL ONTO EXISTING ASPHALT
- ROADWAYS. ANY SEDIMENT ON THE PAVEMENT SHALL BE REMOVED IMMEDIATELY. 4. (SPEC. 3.05) SILT FENCE BARRIERS WILL BE CHECKED DAILY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL REACHES HALF WAY TO THE TOP OF THE BARRIER.
- 5. (SPEC. 3.07) SEDIMENT SHALL BE REMOVED FROM AROUND THE INLET PROTECTION TRAP STRUCTURE AND RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. THE TRAP STRUCTURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY

#### STABILIZED

- 6. (SPEC. 3.20) SEDIMENT SHALL BE REMOVED FROM ROCK CHECK DAMS WHEN IT REACHES ONE-HALF OF THE ORIGINAL HEIGHT OF THE MEASURE. REGULAR INSPECTIONS SHOULD BE MADE TO ENSURE THAT THE CENTER OF THE DAM IS LOWER THAN THE EDGES. EROSION CAUSED BY HIGH FLOWS AROUND THE EDGES OF THE DAM SHOULD BE CORRECTED IMMEDIATELY.
- 7. (SPEC. 3.31 & 3.32) AREAS WHICH FAIL TO ESTABLISH VEGETATIVE COVER ADEQUATE TO PREVENT RILL EROSION WILL BE RESEEDED AS SOON AS SUCH AREAS ARE IDENTIFIED.
- 7A. A SOIL TEST IS REQUIRED, PRIOR TO FINAL SITE STABILIZATION, TO DETERMINE FERTILIZER APPLICATION RATES FOR THE ESTABLISHMENT OF GRASS ON THE SITE. THE VIRGINIA COOPERATIVE EXTENSION, OR A GEOTECHNICAL FIRM WITH SOIL TESTING FACILITIES, SHALL BE CONTACTED TO OBTAIN A SOILS REPORT FOR NUTRIENT APPLICATION 7B. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES MUST BE REMOVED WITHIN THIRTY (30) DAYS OF PERMANENT STABILIZATION OF THE SITE.
- 8. (SPEC. 3.35) WHERE EROSION OR WASHOUT IS OBSERVED IN MULCHED AREAS, ADDITIONAL MULCH SHOULD BE APPLIED.

### VIII. PERMANENT STABILIZATION

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH SEEDING FOLLOWING GRADING IN ACCORDANCE WITH THE MINIMUM STANDARDS. SEEDING SHALL BE IN ACCORDANCE WITH THE TEMPORARY OR PERMANENT SEEDING SCHEDULES SHOWN ON THIS PLAN. IN ALL SEEDING OPERATIONS, TOPSOIL, SEED, FERTILIZER AND LIME SHALL BE APPLIED PRIOR TO INSTALLATION OF MULCHING OR EROSION CONTROL BLANKETS AND MATTING. A SOIL TEST IS REQUIRED, PRIOR TO FINAL SITE STABILIZATION, TO DETERMINE FERTILIZER APPLICATION RATES FOR THE ESTABLISHMENT OF GRASS ON THE SITE. THE VIRGINIA COOPERATIVE EXTENSION, OR A GEOTECHNICAL FIRM WITH SOIL TESTING FACILITIES, SHALL BE CONTACTED TO OBTAIN A SOILS REPORT FOR NUTRIENT APPLICATION."

#### IX. STORMWATER MANAGEMENT

MANAGEMENT OF STORMWATER RUNOFF DURING CONSTRUCTION WILL COMPLY WITH THE EXISTING VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS 9VAC25-840. THE EROSION AND SEDIMENT CONTROL PLANS INDICATE ALL ACTIVITIES AND STRATEGIES NECESSARY TO MINIMIZE EROSION AND SEDIMENTATION DURING CONSTRUCTION.

MANAGEMENT OF STORMWATER RUNOFF AFTER CONSTRUCTION WILL COMPLY WITH THE EXISTING VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATIONS 9VAC25-870. THE STORMWATER MANAGEMENT PLANS INDICATE ALL ACTIVITIES AND STRATEGIES NECESSARY TO COMPLY WITH THE VSMP REGULATIONS AFTER CONSTRUCTION

- A WAIVER FROM STORMWATER REGULATIONS HAS BEEN REQUESTED, SINCE THE PROPOSED CONNECTOR WATERLINE DESIGN IS A LINEAR PROJECT THAT COMPLIES WITH THE FOLLOWING CONDITIONS:
- a. THE PROJECT DOES NOT SIGNIFICANTLY ALTER THE PREDEVELOPMENT RUNOFF CHARACTERISTICS OF THE LAND SURFACE AFTER THE COMPLETION OF CONSTRUCTION AND FINAL STABILIZATION.
- b. THE PROJECT IS MANAGED SO THAT LESS THAN ONE (1) ACRE OF LAND DISTURBANCE OCCURS ON A DAILY BASIS
- c. THE DISTURBED LAND WHERE WORK HAS BEEN COMPLETED IS ADEQUATELY STABILIZED ON A DAILY BASIS. d. THE ENVIRONMENT IS PROTECTED FROM EROSION AND SEDIMENTATION DAMAGE ASSOCIATED WITH THE LAND DISTURBING
- e. THE OWNER AND/OR CONSTRUCTION ACTIVITY OPERATOR DESIGNS, INSTALLS, IMPLEMENTS, AND MAINTAINS POLLUTION PREVENTION MEASURES TO:
- e.1. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM EQUIPMENT AND VEHICLE WASHING, WHEEL WASH WATER, AND OTHER
- e.2. MINIMIZE THE EXPOSURE OF BUILDING MATERIALS, BUILDING PRODUCTS, CONSTRUCTION WASTES, TRASH, LANDSCAPE MATERIALS, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE, AND OTHER MATERIALS PRESENT ON-SITE TO PRECIPITATION AND TO STORMWATER.
- e.3. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM SPILLS AND LEAKS AND IMPLEMENT CHEMICAL SPILL AND LEAK PREVENTION AND RESPONSE PROCEDURES.
- e.4. PROHIBIT THE DISCHARGE OF WASTEWATER FROM THE WASHOUT OF CONCRETE. e.5. PROHIBIT THE DISCHARGE OF WASTEWATER FROM THE WASHOUT AND CLEANOUT OF STUCCO, PAINT, FORM RELEASE
- OILS, CURING COMPOUNDS, AND OTHER CONSTRUCTION MATERIALS; AND e.6. PROHIBIT THE DISCHARGE OF FUELS, OILS, OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE. F. THE OWNER AND/OR CONSTRUCTION ACTIVITY OPERATOR PROVIDES REASONABLE ASSURANCE TO DEQ OR THE LOCAL VSMP AUTHORITY THAT ALL OF THE ABOVE CONDITIONS WILL BE SATISFIED. THIS MAY BE ACCOMPLISHED

BY INCORPORATING THESE CONDITIONS INTO AN EROSION AND SEDIMENT CONTROL PLAN DEVELOPED FOR THE PROJECT.

## X. SOIL STOCKPILES AND BORROW AREAS

FILL MATERIAL SHALL BE OBTAINED FROM AREAS OF EXCAVATION ON SITE. LOCATIONS OF SOIL STOCKPILES SHALL BE DETERMINED BY THE CONTRACTOR WITH THE APPROVAL OF THE OWNER/DEVELOPER. ALL STOCKPILES SHALL BE LOCATED ON SITE AND PROTECTED WITH SURROUNDING SILT FENCING AND STABILIZED WITH A VEGETATIVE COVER. THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION AND SEDIMENT CONTROL PLAN FOR ALL SOILS INTENTIONALLY TRANSPORTED OFFSITE IF THE TRANSPORTED MATERIAL DISTURBS MORE THAN 1,000 SQUARE FEET IN AREA.THE CONTRACTOR SHALL PROVIDE THE CITY LOCATION OF PERMITTED SITE NO LATER THAN THE PRE-CONSTRUCTION MEETING IF AN OFF-SITE AREA IS TO BE USED FOR IMPORTING OR EXPORTING SOIL.

THE CONTRACTOR SHALL PROVIDE AN INDIVIDUAL CERTIFIED BY THE DEQ AS A RESPONSIBLE LAND DISTURBER.

PS PERMANENT SEEDING SCHEDULE		TS TEMPORARY SEED	DING SCHEDULE	
SITE SPECIFIC SEEDING MIXTURES FOR PIEDMONT AREA		PLANTING SPECIES	SPECIES	RATE (LBS/ACRE
MINIMUM LAWN CARE (COMMERCIAL OR RESIDENTIAL)	TOTAL POUNDS PER ACRE 175-200 LBS	SEPT 1 - FEB 15	50/50 MIX OF ANNUAL RYEGRASS <u>(LOLIUM</u> <u>MULTI-FLORUM)</u> &	50 - 100
KENTUCKY 31 OR TURF-TYPE TALL FESCUE	95-100% 0-5%		CEREAL (WINTER) RYE (SECALE CERALE)	
KENTUCKY BLUEGRASS	0-5%	FEB 16 - APR 30	ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM)	60 - 100
HIGH MAINTENANCE LAWN CARE KENTUCKY 31 OR TURF-TYPE TALL FESCUE	200-250 LBS 100%	MAY 1 - AUG 31	GERMAN MILLET <u>(SETARIA ITALICA)</u>	50
GENERAL SLOPE (3:1 OR LESS)				
KENTUCKY 31 FESCUE	128 LBS			
ROUNDHEADED BUSHCLOVER	2 LBS			
SEASONAL NURSE CROP*	<u>20 LBS</u>			
LOW MAINTENANCE SLOPE (STEEPER THAN 3:1)	150 LBS	*USE SEASONAL NURS AS STATED BELOW:	SE CROP IN ACCORDANCE WITH	SEEDING DATES
KENTUCKY 31 FESCUE	108 LBS	ANNUAL RYE:	FEBRUARY 16TH THROUGH AP	
RED TOP GRASS	2 LBS	FOXTAIL MILLET: ANNUAL RYE:	MAY 1ST THROUGH AUGUST 19 AUGUST 16TH THROUGH OCTO	
SEASONAL NURSE CROP*	20 LBS	WINTER RYE:	NOVEMBER THROUGH FEBRUA	ARY 15TH
INDIAN GRASS	<u>20 LBS</u>	LIME & FERTILIZER SP	ECIFICATIONS:	
	150 LBS	A SOILS TEST IS REQU	JIRED PRIOR TO FINAL SITE STA	ABILIZATION, TO

A SOILS TEST IS REQUIRED PRIOR TO FINAL SITE STABILIZATION, TO DETERMINE LIME AND FERTILIZER APPLICATION RATES FOR THE ESTABLISHMENT OF GRASS ON SITE. CONTACT VIRGINIA COOPERATIVE EXTENSION OR A GEOTECHNICAL FIRM WITH SOIL TESTING FACILITIES TO OBTAIN A SOILS REPORT FOR NUTRIENT

LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE TOP 4 INCHES OF TOPSOIL BY DISCING OR OTHER MEANS WHENEVER POSSIBLE. FOR EROSION CONTROL, WHEN APPLYING LIME AND FERTILIZER WITH A HYDROSEEDER, APPLY TO A ROUGH, LOOSE

MULCH WITH STRAW AT A RATE OF 2 TONS/ACRE OR EQUIVALENT.



ROAD DESIGN CANDL

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COMM NO: 218090 FEBRUARY 1, 2022 DRAWN: MCT DESIGN:

E&S NARRATIVE

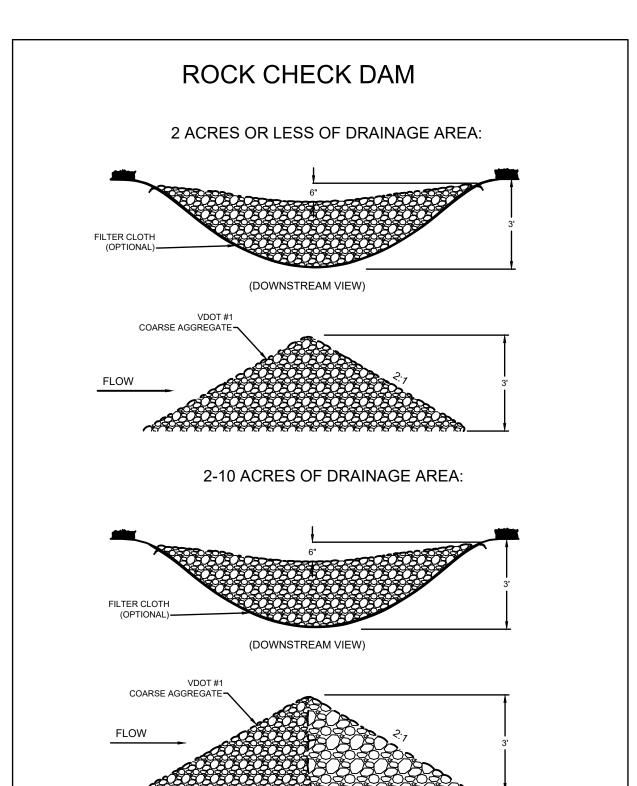
MAINTAIN ALL SEEDED AREAS UNTIL A UNIFORM STAND IS ACCEPTED.

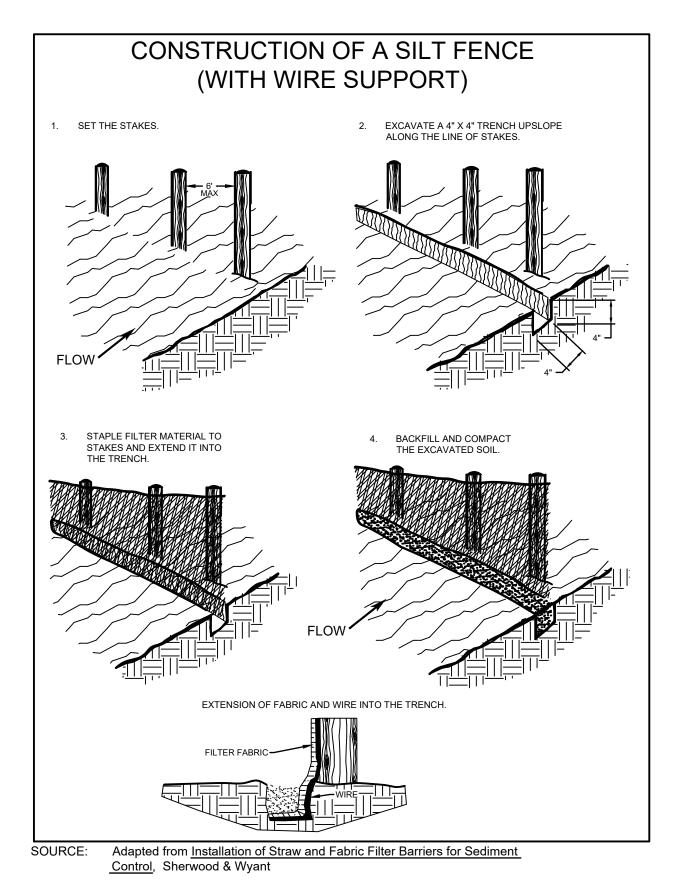
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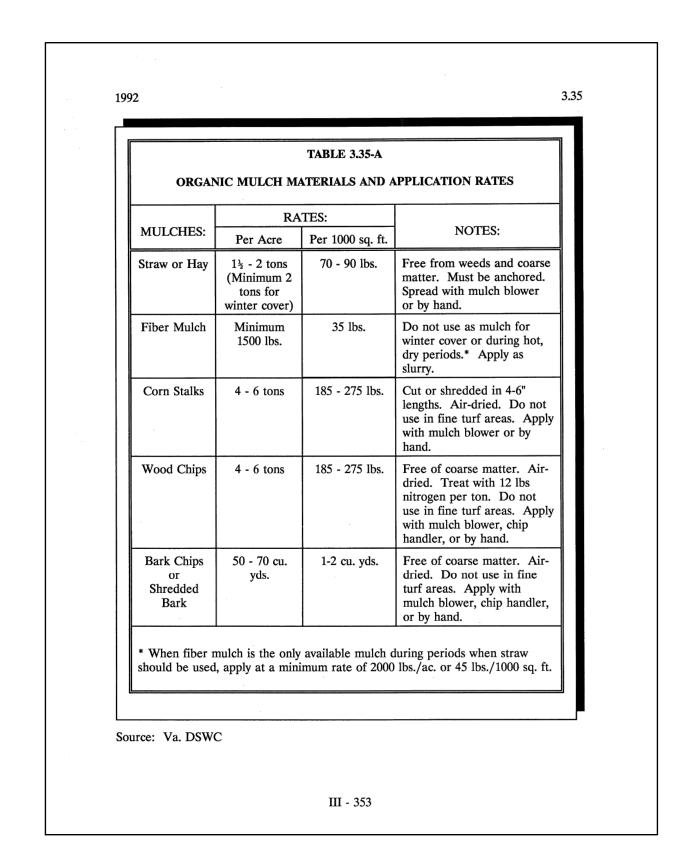
C-401

STONE CONSTRUCTION ENTRANCE

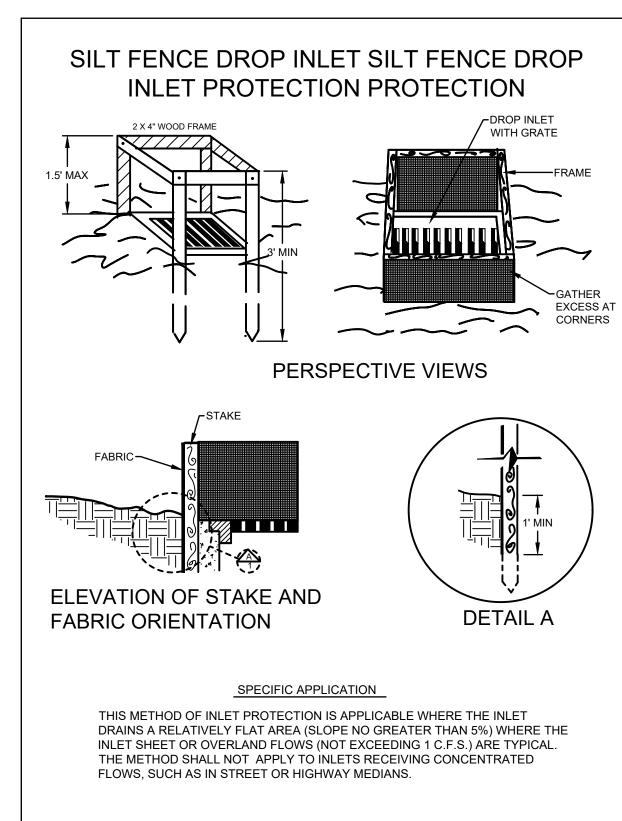




SILT FENCE PLATE 3.05-1 (SF NOT TO SCALE

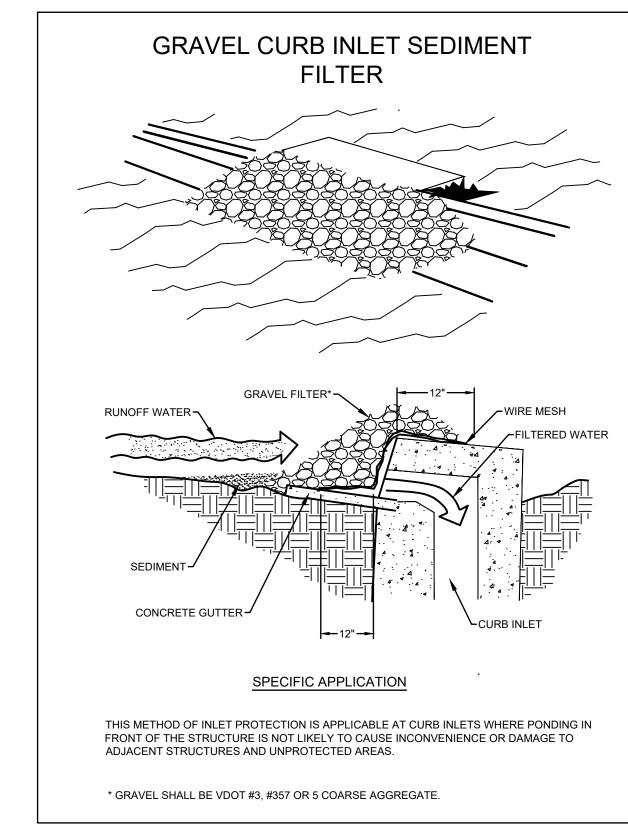


ORGANIC MULCH MATERIALS AND APPLICATION RATES NOT TO SCALE



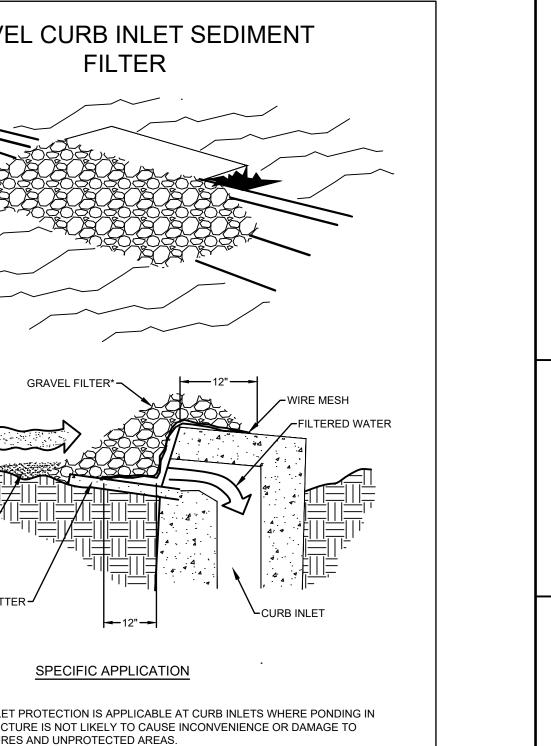
SOURCE: N.C. Erosion and Sediment Control Planning and Design Manual, 1988

STORM DRAIN INLET PROTECTION PLATE 3.07-1 ( IP )



SOURCE: VA. DSWC

STORM DRAIN INLET PROTECTION PLATE 3.07-6 ( IP ,



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**E&S DETAILS** 

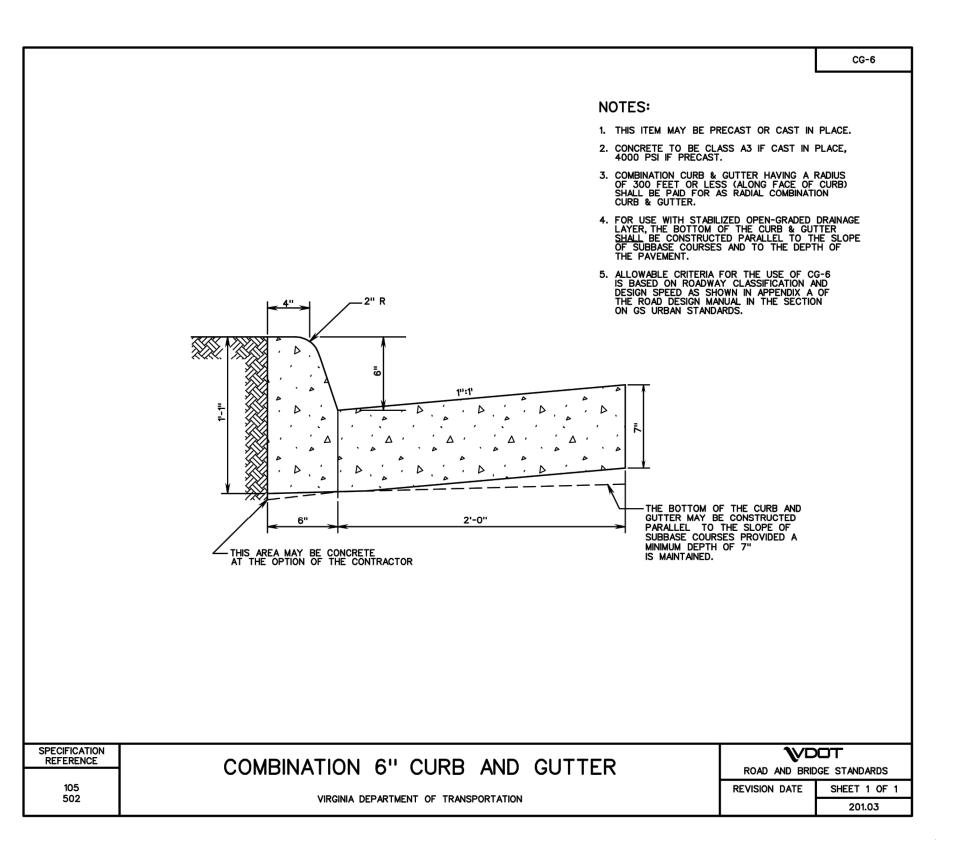
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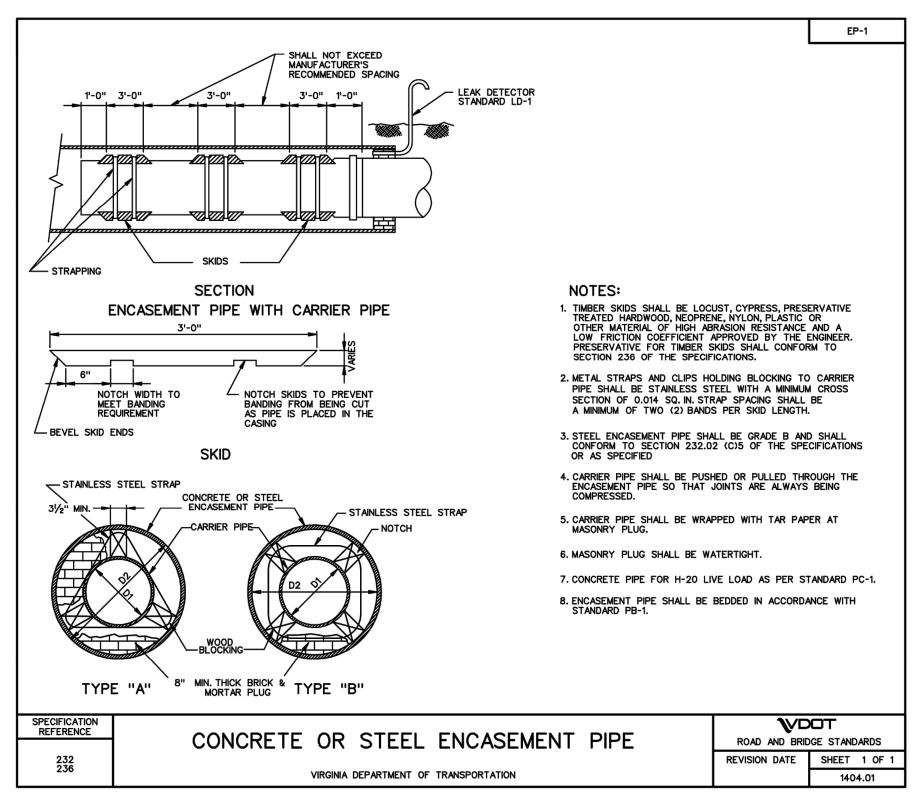
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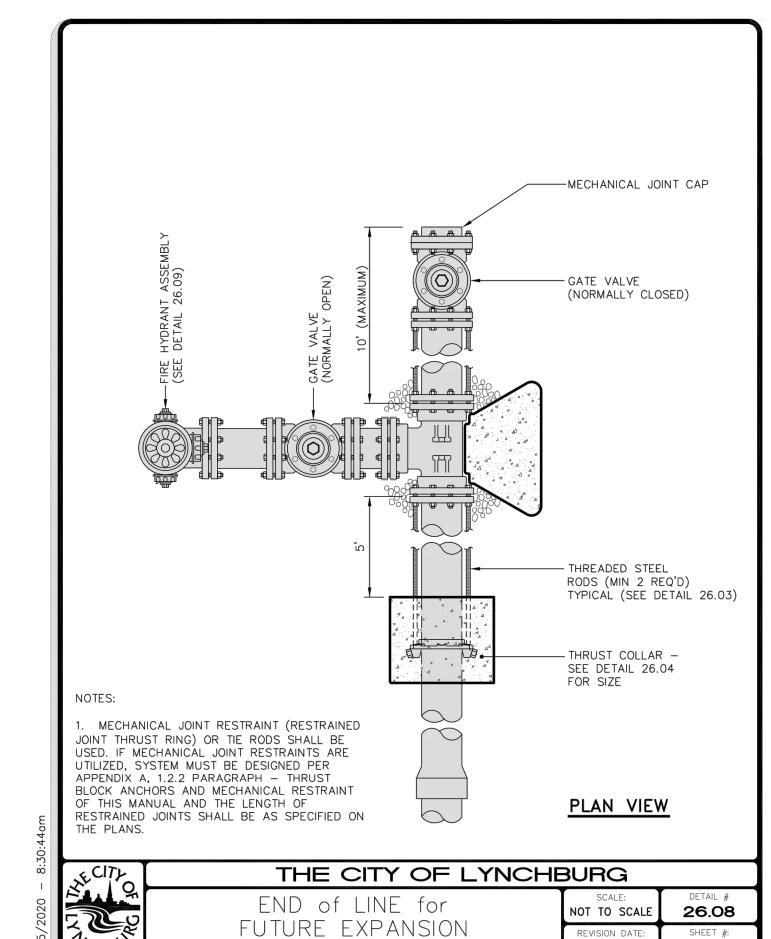
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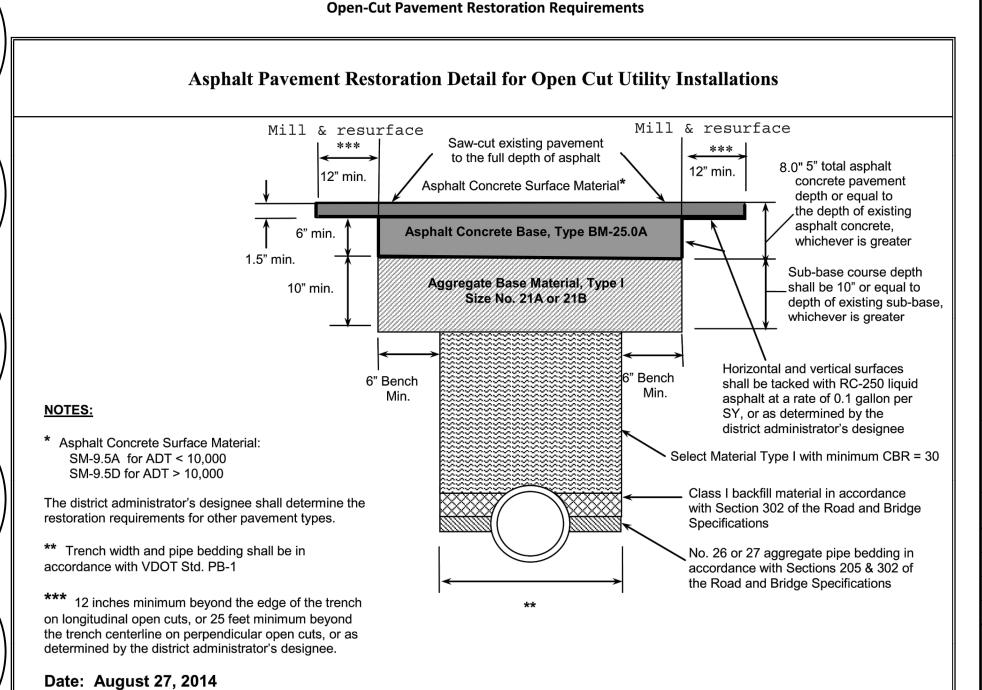
SOURCE: VA. DSWC ROCK CHECK DAMS NOT TO SCALE

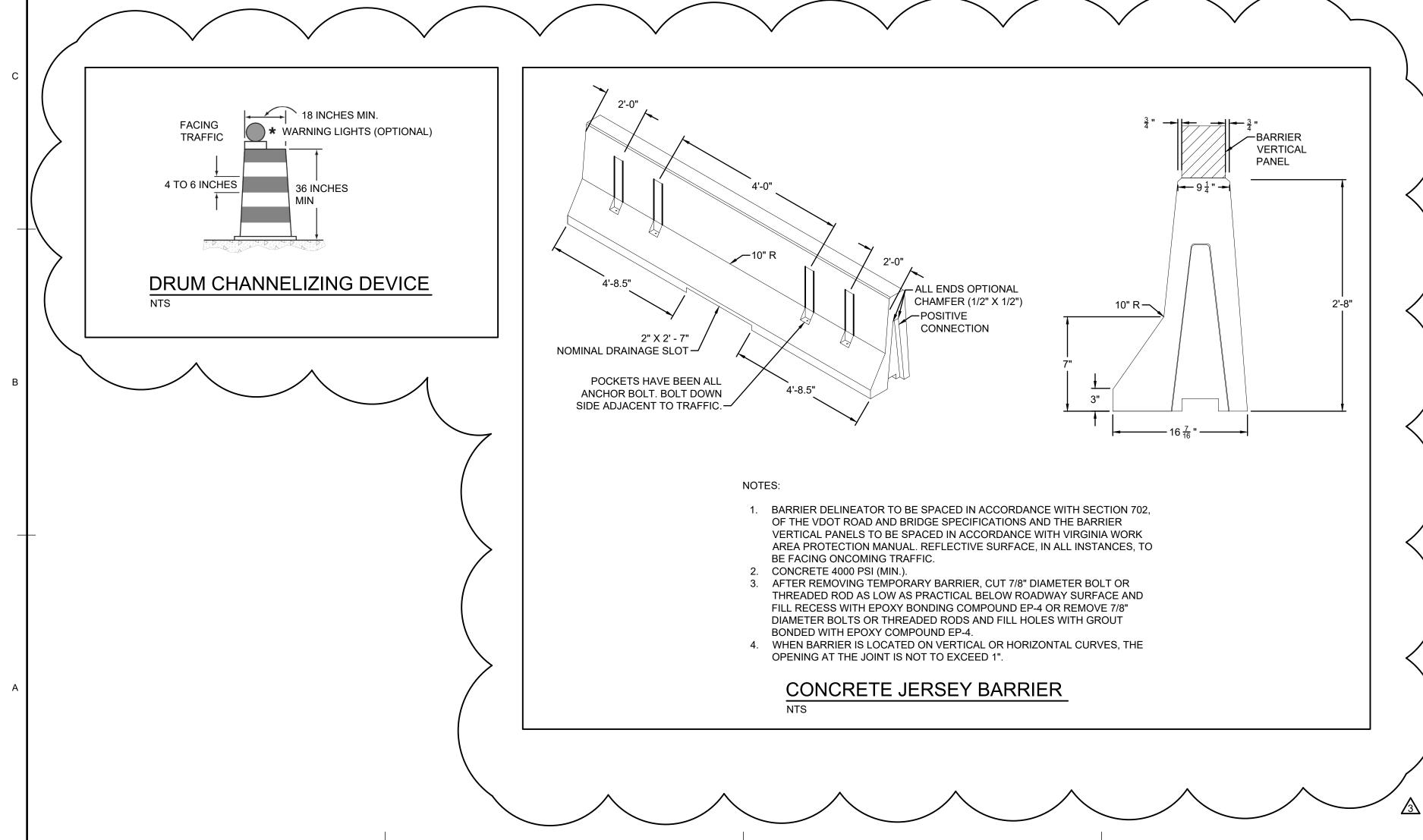














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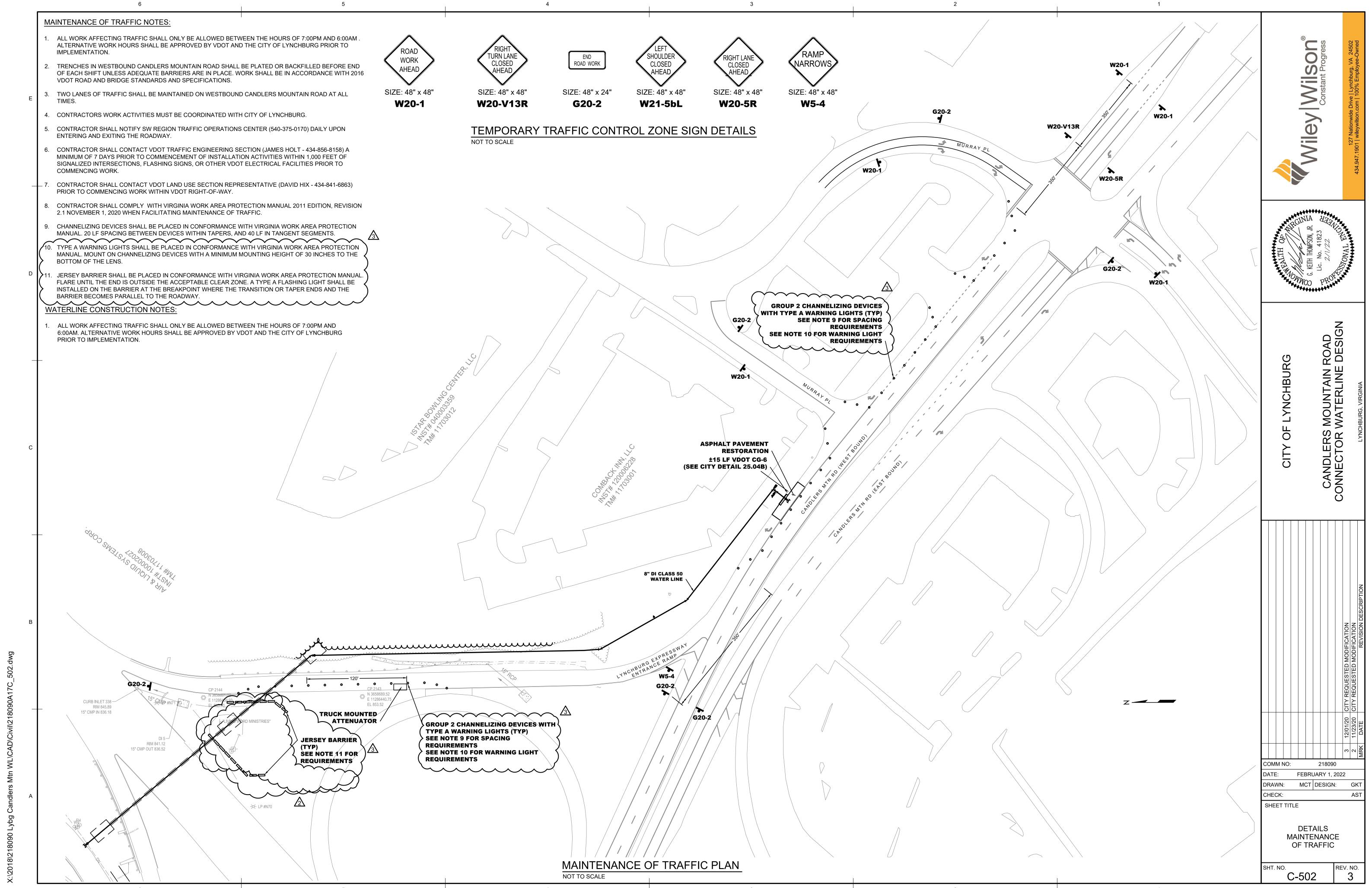
ROAD E DESIGN MOUNTAIN F WATERLINE CANDLERS I

COMM NO: 218090 FEBRUARY 1, 2022 DRAWN: MCT DESIGN: CHECK: SHEET TITLE

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**DETAILS** 



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